

## **REMARKS**

### **Status Of Application**

Claims 1-12 are pending in the application. The status of the claims is as follows:

Claims 1-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,696,421 to Zumeris et al. (hereinafter the "Zumeris patent"), in view of U.S. Patent No. 6,201,340B to Matsuda et al. (hereinafter the "Matsuda patent").

### **Claim Amendments**

Claims 1 and 7 have been amended to improve the form of each respective claim. These changes are not necessitated by the prior art, are unrelated to the patentability of the invention over the prior art, and do not introduce any new matter.

### **35 U.S.C. § 103(a) Rejection**

The rejection of claims 1-12 under 35 U.S.C. § 103(a), as being unpatentable over the Zumeris patent, in view of the Matsuda patent, is respectfully traversed based on the following.

Claims 2-6 depend from claim 1, and claims 8-12 depend from claim 7. Accordingly, a review of independent claims 1 and 7 is essential to an analysis of the § 103 rejection of claims 1-12.

Each of claim 1 and claim 7 requires "a compression member for pressing said drive member against the driven member such that the drive member and the driven member are in a state of intermittent contact, and under conditions near a condition of transition from the intermittent contact state to a normal contact state". None of the cited references discloses or suggests this feature.

The Office Action correctly acknowledges that the Zumeris patent does not disclose a compression member as required in the present claims. However, the Office Action further states that the Matsuda patent teaches the construction of a compression member in accordance with the compression member required in each of claim 1 and claim 7.

Firstly, the Office Action cites chip member 20, of the Matsuda device, as meeting the requirements of a compression member as required by claims 1 and 7. However, as shown in Fig. 2 and Figs. 4A-4D of the Matsuda patent, chip member 20 is adhered to an end of each of piezoelectric devices 10 and 10' to contact the surface of a rotor 40. Thus, chip member 20 is a driving device used to impart a movement to rotor 40 and does not meet the requirements of a compression member as defined by each of claim 1 and claim 7.

Secondly, MPEP 2143 teaches that to establish a *prima facie* case of obviousness, there must be some suggestion or motivation to combine the reference teachings, there must be a reasonable expectation of success, and the prior art references must teach or suggest all of the claim limitations. The present rejection is lacking in all three respects.

Neither the Zumeris patent nor the Matsuda patent provide any suggestion or motivation that would encourage one of ordinary skill in the art to combine the two references to create the device presently claimed, including a compression member for pressing a drive member against a driven member such that the drive member and the driven member are in a state of intermittent contact, and in a state near a condition of transition from the intermittent contact state to a normal contact state. In fact, without the use of impermissible hindsight, one of ordinary skill in the art finds no objective reason to combine these two references. That is, neither reference discusses the problems that are encountered when piezoelectric devices are driven such that the amount of displacement of the piezoelectric element and the drive member is small and a normal contact state occurs, thus, decreasing the efficiency of the actuator; nor do the references discuss how

piezoelectric actuators behave at critical regions between an intermittent contact state and a normal contact state, with respect to different influences like, applied voltages and compression forces. Consequently, the cited references, whether they are taken singly or in combination, do not disclose or suggest the advantage of a device as claimed, including a compression member for pressing the drive member against the driven member such that the drive member and the driven member are in a state of intermittent contact and in a state near a condition of transition from an intermittent contact state to a normal contact state.

Further, it is unclear how tip member 20 of the Matsuda device would be integrated into the Zumeris device in such a way as to be a compression member in accordance with the present claims. Specifically, item three (3) of the Office Action only offers that “[I]t would have been obvious to one skilled in the art at the time the invention was made to use the trus[t] type actuator disclosed in Matsuda et al. on the actuator disclosed by Zumeris et al. for the purpose of driving in a precise electronically controlled manner, a multiple axis rotational member or rotor by using a combination of predetermined elliptical trials instead of a common uncontrolled bearing assembly.” However, it is unclear how one of ordinary skill in the art would firstly, integrate chip member 20 of the Matsuda device into the Zumeris device, and more specifically, integrate chip member 20 into the Zumeris device in such a way that it renders the present claims obvious. In particular, chip member 20 does not function as a compression member, as required by claim 1 and claim 7, in the environment described in the Matsuda patent; therefore, it is unlikely that one of ordinary skill in the art would reasonably expect to have success in creating the present invention by combining chip member 20 of the Matsuda patent with the device described in the Zumeris patent such that it performs a function that it does not perform in the Matsuda device.

Moreover, were the Zumeris patent and the Matsuda patent to be combined, the combination would still lack a compression member as required by claim 1 and claim 7. More specifically, the Office Action acknowledges that the Zumeris patent fails to disclose

or suggest a compression member in accordance with the claimed compression member, and although the Office Action states that the Matsuda patent discloses such a compression member, it has been shown above that this is contrary to fact. That is, like the Zumeris patent, the Matsuda patent also fails to disclose or suggest a compression member in accordance with the present claims. Thus, both references fail to disclose or suggest a device including a compression member which meets the requirements of claims 1 and 7.

Therefore, because the Zumeris patent and the Matsuda patent, individually and in combination fail to disclose or suggest a compression member as claimed in claim 1 and claim 7, each of claims 1 and 7 are distinguished and nonobvious over any of the Zumeris patent, the Matsuda patent, and any combination of the two.

As claims 2-6 depend from claim 1, and claims 8-12 depend from claim 7, dependent claims 2-6 and 8-12 are also distinguished and nonobvious over any of the Zumeris patent, the Matsuda patent, and any combination of the two.

Accordingly, it is respectfully requested that the rejection of claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over the Zumeris patent, in view of the Matsuda patent, be reconsidered and withdrawn.

### **CONCLUSION**

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment does not increase the number of independent claims, does not increase the total number of claims, and does not present any multiple dependency claims. Accordingly, no fee based on the number or type of claims is currently due. However, if a


fee, other than the issue fee, is due, please charge this fee to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260.

Any fee required by this document other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

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**APPENDIX**

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

The following is a marked-up version of the changes to the claims which are being made in the attached response to the Office Action dated June 5, 2002.

**IN THE CLAIMS:**

1. (Twice Amended) An actuator for moving a driven member, said actuator comprising:

- a displacement element for producing a specific displacement;
- a drive member connected to one end of said displacement element and which transfers the displacement of said displacement element to a driven member;
- a stationary member which supports the other end of the displacement element;
- a compression member for pressing said drive member against the driven member such that the drive member and the driven member are in a state of intermittent [contact] contact, and under conditions near [the] a condition of transition from the intermittent contact state to a normal contact state; and
- a drive circuit for driving said displacement element.

7. (Twice Amended) An actuator for moving a driven member, said actuator comprising:

- a first displacement element for producing a first specific displacement;
- a second displacement element for producing a second specific displacement having a direction which has a predetermined angle to a direction of the first specific direction of said first displacement element;
- a drive member connected to one end of each of said first and second displacement elements and which transfers the displacement of said first and second displacement elements to a driven member;
- a stationary member which supports the other end of each of the first and second

displacement elements;

a compression member for pressing said drive member against the driven member such that the drive member and the driven member are in a state of intermittent [contact] contact, and under conditions near [the] a condition of transition from the intermittent contact state to a normal contact state; and

a drive circuit for driving said first and second displacement elements.